

PEOPLE'S COMMITTEE OF DA NANG CITY



THE PROJECT BUILDING DANANG - AN ENVIRONMENTAL CITY

PERIOD 2021 - 2030

DA NANG - 2021

ỦY BAN NHÂN DÂN
THÀNH PHỐ ĐÀ NẴNG

Số: ~~1099~~/QĐ-UBND

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Đà Nẵng, ngày 02 tháng 4 năm 2021

QUYẾT ĐỊNH

Ban hành Đề án “Xây dựng Đà Nẵng - Thành phố môi trường”
giai đoạn 2021 - 2030

ỦY BAN NHÂN DÂN THÀNH PHỐ ĐÀ NẴNG

Căn cứ Luật Tổ chức chính quyền địa phương ngày 19 tháng 6 năm 2015;

Căn cứ Luật sửa đổi, bổ sung một số điều của Luật Tổ chức Chính phủ và Luật Tổ chức chính quyền địa phương ngày 22 tháng 11 năm 2019;

Căn cứ Luật Bảo vệ môi trường ngày 17 tháng 11 năm 2020;

Căn cứ Nghị quyết số 43-NQ/TW ngày 24 tháng 01 năm 2019 của Bộ Chính trị về xây dựng và phát triển thành phố Đà Nẵng đến năm 2030, tầm nhìn đến năm 2045;

Căn cứ Quyết định số 1216/QĐ-TTg ngày 05 tháng 9 năm 2012 của Thủ tướng Chính phủ về việc phê duyệt Chiến lược Bảo vệ môi trường quốc gia đến năm 2020, tầm nhìn đến năm 2030;

Căn cứ Quyết định số 622/QĐ-TTg ngày 10 tháng 5 năm 2017 của Thủ tướng Chính phủ về việc ban hành kế hoạch hành động quốc gia thực hiện chương trình nghị sự 2030 vì sự phát triển bền vững;

Căn cứ Quyết định số 681/QĐ-TTg ngày 04 tháng 6 năm 2019 của Thủ tướng Chính phủ về việc ban hành Lộ trình thực hiện các mục tiêu phát triển bền vững Việt Nam đến năm 2030;

Căn cứ Quyết định số 34/2005/QĐ-TTg ngày 22 tháng 02 năm 2005 của Thủ tướng Chính phủ ban hành Chương trình hành động của Chính phủ thực hiện Nghị quyết số 41-NQ/TW ngày 15 tháng 11 năm 2004 của Bộ Chính trị về bảo vệ môi trường trong thời kỳ đẩy mạnh công nghiệp hoá, hiện đại hoá đất nước;

Căn cứ Nghị quyết số 348/NQ-HĐND ngày 09 tháng 12 năm 2020 của Hội đồng nhân dân thành phố Đà Nẵng về nhiệm vụ năm 2021;

Theo đề nghị của Giám đốc Sở Tài nguyên và Môi trường.

QUYẾT ĐỊNH:

Điều 1. Ban hành Đề án “Xây dựng Đà Nẵng - thành phố môi trường” giai đoạn 2021 - 2030.

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Điều 2. Quyết định này có hiệu lực thi hành kể từ ngày ký.

Điều 3. Chánh Văn phòng UBND thành phố; Giám đốc Sở Tài nguyên và Môi trường; Thủ trưởng các cơ quan chuyên môn có liên quan thuộc Ủy ban nhân dân thành phố; Chủ tịch Ủy ban nhân dân các quận, huyện và các tổ chức, cá nhân có liên quan chịu trách nhiệm thi hành Quyết định này. *th*

Nơi nhận:

- Như Điều 3;
- Bộ TN&MT;
- TTTU, TT HĐND TP;
- Chủ tịch và các PCT UBND thành phố;
- UBNDTTQVN thành phố và các hội, đoàn thể TP;
- Các sở, ban, ngành;
- UBND các quận, huyện, xã, phường;
- Đài PTTH Đà Nẵng, Báo Đà Nẵng;
- Công TTĐT thành phố;
- Trung tâm THVN tại Đà Nẵng;
- Lưu: VT, ĐT-ĐT, STNMT.

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TM. ỦY BAN NHÂN DÂN

K. CHỦ TỊCH
PHÓ CHỦ TỊCH



Lê Quang Nam





CHAPTER I. OVERVIEW THE PROJECT IN THE 2008-2020 PERIOD

1. PROJECT IMPLEMENTATION

- In 2008, following the direction of the Party's Committee of Da Nang City, the People's Committee issued Decision No. 41/2008/QĐ-UBND dated August 21st, 2008 implementing **"Building Da Nang into an Environmental City"** project in period 2008-2020¹. Since then, the objectives and criteria of an environmental city have been identified as an important focus by the Party's Committee, People's Council, and People's Committee, with comprehensive and synchronous participation by all levels of local authority. Those objectives and criteria have also been integrated into the city's development strategies, plans and programs. In order to foster the development of services - tourism and advanced, high-tech industries while ensuring environmental qualities, Da Nang City had decided to refuse a number of project proposals which predominantly using old technologies, outdated production, or projects with potential risks of pollution; while encouraging eco-friendly tourism and services, issuing policies to protect the environment of residential areas and ecosystems. So far, the city has been able to establish the balance between the economy - society - environment, and integrate environmental protection into the socio-economic development in a harmonious way.
- Legal documents, specific programs and plans for environmental protection have been promptly issued, creating favorable conditions for state management at sectoral and local levels, meeting the practical needs of the city development. Specifically, the regulations on environmental protection have been regularly updated²; the master plans for solid waste management, drainage management and wastewater treatment were approved; projects on biodiversity conservation and regulations on aquatic environment zoning were implemented; etc. Furthermore, the city has issued many plans and projects to handle environmental hotspots³; improve urban drainage systems and urban waste management; decentralize environmental management by specialization and by locality⁴; actively cope with climate change; and effectively manage and protect environmental resources.
- The Steering Committee of the "Building Da Nang into an Environmental City" Project was established to assist the People's Committee in managing project implementation. In 2014, the Steering Committee conducted the mid-term review for the 2008-2014 period and approving the roadmap up to 2020. Since 2017, the People's Committee has issued annual plans for the Project, focusing on the tasks set out in Decision No. 7702/QĐ-UBND on enhancing the treatment of environmental hot spots. A number of key projects associated with pollution reduction and environmental quality improvement have attracted significant investments.

¹Main goals of the project: ⁽¹⁾ Striving to qualify for designation as an ecofriendly city which meets the requirements of soil- water and air quality; thereby ensuring health and environmental safety for residents; investors; and domestic and international tourists; ⁽²⁾ Preventing environmental pollution and degradation; acquiring sufficient capacity to handle and resolve environmental incidents; ⁽³⁾ All the city inhabitants; domestic and foreign visitors and businesses in Da Nang shall be conscious of environmental protection; and willing to help transform Da Nang into an environmental city.

²Decision No. 23/2010/QĐ-UBND dated August 10th 2010, Decision No. 39/2014/QĐ-UBND dated October 29th 2014 and Decision No. 33/2018/QĐ-UBND dated October 01st 2018 issuing regulations on environmental protection in Da Nang city.

³Decision No. 7702/QĐ-UBND dated November 08th 2016 on enhancing the resolve of environmental hot spots.

⁴Decisions No. 19/2018/QĐ-UBND dated May 07th 2018 promulgating regulations on the management of public services for environmental sanitation in Da Nang; Decisions No. 18/2017/QĐ-UBND dated June 08th 2017 on collecting environmental protection fees for industrial wastewater.

2. RESULTS OF PROJECT IMPLEMENTATION

2.1. Major achievements

a) Education, awareness and responsibility enhancement regarding environmental protection

During 2008 - 2020, the People's Committees at city and districts' levels, various departments and agencies developed their specific programs and plans on raising awareness and sense of responsibility in environmental protection. Through regular press meetings, sectoral briefings, specialized conferences and workshops, working with public collaborators and so on, Da Nang Party's Communications and Training Commission, Department of Information and Communications, and other departments and agencies gained a good grasp of various contemporary environmental issues to put forward specific orientation and appropriate communication campaigns. In particular, prominent public opinions of concern were reported to city's leaders for prompt directions. The Da Nang Party's Communications and Training Commission and other departments also coordinated with local media agencies to disseminate information about environmental problems and protection.

Fundamental knowledge of environmental protection, the intention of building an environmental city, or the status of solving environmental problems have been widely disseminated in various forms and made accessible by the public through many channels such as training courses, forum talks, residential group meetings, mass media, events, campaigns of many departments and agencies, etc. These have helped to mobilize a whole-of-society participation, with the active engagement of local residents in environmental protection movements, models and activities⁵.

b) Criteria and targets achieved

There were 7 out of 10 "environmental city" criteria which were achieved: (1) the air pollution index (API) in urban areas was maintained at less than 100; (2) noise levels in residential areas under 60 db(A), on main roads under 75 db(A); (3) average urban green area at 6 – 8 m²/person; (4) percentage of households with access to clean water in city center and rural area were 97.83% and 76.81% respectively; (5) 100% of industrial wastewater met discharge requirements; (6) the proportion of domestic solid waste collected in urban areas was higher than 95%, in rural areas higher than 70%; (7) in 2020, over 83% of domestic wastewater was collected, over 50% was properly treated in accordance with standards.



⁵Environmental Districts and Environmental Wards/Communes "Green-Clean-Beautiful Sunday", "Green Living" by the Women's Union; "Green School", Environment Club by the Veterans Association; "Zero-waste Residential Group"; Waste segregation at source; Zero-plastic-waste marine environment; etc.



In general, after more than a decade of the Project “Building Da Nang into an Environmental City”, in the context of non-stop and fast economic development along with rapid urbanization, the city has undergone profound changes and great developments, and the environmental quality was at a good level. Da Nang’s tremendous efforts in environmental protection have been recognized by the domestic and global communities, shown by many prestigious awards, such as: one of ASEAN’s 11 environmentally sustainable cities (2011), Asia’s Low-Carbon City (2012), Asian Townscape Award (2013), Excellence in City Transformation (2015), and National Green City of Vietnam (2018).



2.2. Criteria and targets which were not achieved

Despite the remarkable achievements above, there are still a number of challenges and difficulties in implementing the Project that prevents Da Nang from qualifying for the designation as an environmental city. 3 out of the 10 criteria have not been either evaluated or achieved: The proportion of factories that control their air pollution, the proportion of river, lake, coastal area underground water meeting the requirements (where showed signs of pollution), and the percentage of industrial solid waste reuse. The urban planning process is still facing many challenges; fail to strictly comply with regulations and standards, leading to the problem of inappropriate minimum isolation distance from production facilities to surrounding residential areas surrounding industrial parks. Lack of green spaces is also a problem. Garbage transfer stations are located in or near residential areas. A boom of coastal tourism projects has overloaded the systems of drainage, wastewater and solid waste treatment. Investment in environmental infrastructure is on a small or medium scale, while the treatment technology is not thoroughly selected, which results in prolonged pollution and counterproductive effects. Environmental monitoring facilities and equipment to forecast and prevent pollution are still of poor quality and outdated. The capacity for automatic environmental monitoring and information technology application remains at low levels. Human resources for environmental management have not yet corresponded with urban development and new specialized management requirements. Financial resources from the city budget are not really sustainable. There is insufficient capital for developing urban infrastructure such as wastewater collection and treatment system. Garbage collection, transport, treatment and landfill are putting a strain on the city whereas privatization is quite a new term and poses many challenges.

3. GENERAL EVALUATION

3.1. Results

- After 12 years of implementing the Project, under timely leadership and direction of the Party and the city government at all levels, along with the coordination of departments, agencies, unions and localities, there is a broad consensus among local organizations, businesses and community on the implementation of the Project's tasks and objectives. Da Nang has undergone profound changes and great developments, clearly demonstrated through national and international awards and certifications in terms of urban management, environmental protection and climate change adaptation.
- Communications and awareness raising programs were highly effective, helping 100% of the community become aware of and concurred with the aims and objectives of building an environmental city⁶. The privatization and mobilization of community contribution towards building an environmental city achieved certain results. Many movements, models and initiatives in environmental protection have been replicated among agencies, mass organizations and the masses.
- The planning and development of urban infrastructure, socio-economic development gave priority to the implementation of key projects on environmental protection, natural disaster prevention and climate change response, public health care, etc. Investment on environmental protection began with many important projects⁷, steadily improving the city's urban infrastructure facilities and environment. For the management of land, water, resources and ecosystems, relevant legal documents have been issued; the city has started to plan for the proper management and utilization of resources and environmental restoration after exploitation.
- International cooperation, science and technology application have made significant contribution towards diversifying capital sources, mobilizing supports from ministries, sectors, partners organizations, in order to effectively implement projects in environmental treatment, climate change response and natural disasters prevention.



⁶Many residential areas, residential groups, wards, communes and districts maintained the Green-Clean-Beautiful Sunday movement and achieved certain results promoting the great sense of environmental responsibility. Thus, local environmental issues were resolved by the community. Many meaningful environmental protection activities, good models and initiatives have been carried out through localities, associations and mass organizations at all levels.

⁷Priority Infrastructure Investment Project, Sustainable City Development Project, Water Environment Improvement Project, etc.



3.2. Problems and challenges

- Despite some good results, there are still many difficulties and problems. The approach to an “Environmental City” in 2008 was still very new in Vietnam. At that time, there was no specific guidance from the central ministries and sectors. The criteria of an Environmental City in Da Nang were set out mainly with reference to advanced cities in the world, which led to the fact that many criteria were inappropriate. The project implementation lacked initiative in integrating relevant tasks with building mechanisms and policies to mobilize social resources more effectively. Investment resources for construction of environmental infrastructure were asynchronous. Evaluation and forecast were ineffective, lacking the solutions to prevent and reduce environmental pollution while the risk of pollution was always present.

3.3. Lessons learned

- Overall, the lessons learnt between 2008 and 2020 laid foundations for building an “environmental city”, with an aim towards an “ecological city”. First, it is essential to focus on resolving current issues, at the same time, to make use of favorable conditions and new opportunities to foster a circular economy, an ecological city, and efficiently make use of natural resources, etc. The project implementation in the near future shall be reviewed annually, every five years, every ten years to promptly adapt to rapid urban development.
- Secondly, it is important to continue and renew the forms of communications to raise awareness on environmental protection and gradually change people’s daily lifestyle to reduce impacts on the environment. The focus is on building programs, in-depth trainings, practical models and monitor, evaluate the effectiveness of such activities. The quality could be improved by using appropriate online communication platforms and tools or through the mass media, which can reach out to many groups of people.
- Thirdly, prevention, response, elimination of environmental pollution is urgent, which require concrete processes, policies and the definition of roles and responsibilities of each stakeholder. It is crucial to minimize the occurrence of environmental incidents leading to complicated urban safety and security issues.
- Fourthly, environmental projects and programs should be given priorities, with high contingencies, high quality, strategic planning and long-term vision. It is recommended that more attention is given to projects associated with high technology, information technology and environmentally friendly objectives.
- Fifthly, there is a need to promote decentralization, enhance capacity building and increase human resources to perform assigned tasks; invest in monitoring systems, pollution forecasting and control tools, and online environmental data systems in a timely and sufficient manner for forecasting, preventing and promptly handling environmental problems that may arise.
- Finally, it is necessary to apply information technology to provide and disclose environmental information, environmental protection responsibilities of all organizations and people.





CHAPTER II. CURRENT ENVIRONMENTAL QUALITY AND FORECAST ACCORDING TO DEVELOPMENT SCENARIOS

1. CURRENT ENVIRONMENTAL QUALITY

1.1. Air environment

- Over the years, the quality of air environment in the city has shown some signs of considerable improvement. Basic air parameters such as (PM₁₀), NO₂, SO₂ and O₃ particles at monitoring sites have all met the national standards at QCVN 05:2013/BTNMT. At all 55 periodic air-monitoring sites, the 2020 air quality index (AQI) reflected the air quality from average to good (AQI < 100). 43 out of 55 monitoring sites showed good air quality (AQI < 50) and 12 out of 55 sites showed average quality (50 < AQI < 100).

1.2. Aquatic environment

- On Cu De River, during the period 2008-2020, there are 6 monitoring sites: 6,000m from the river mouth (S1); 1,000m upstream from the river mouth (S2); Pho Nam bridge (S3); Nam O bridge (S4); confluence of South river and North river (S5); at the foot of Nam O Bridge (S6).



Figure 1. COD in Cu De river water (2008 – 2020)

- According to monitoring results, the basic water parameters of Cu De river have not shown any pollution. Specifically, the annual average of COD, BOD₅, and Coliform at all sites have met the standards.
- On Phu Loc river, there are 4 river water monitoring sites: Da Co bridge (S7); Phu Loc bridge (S8); at the estuary (S9) and at the foot of Phu Loc Bridge (S10).

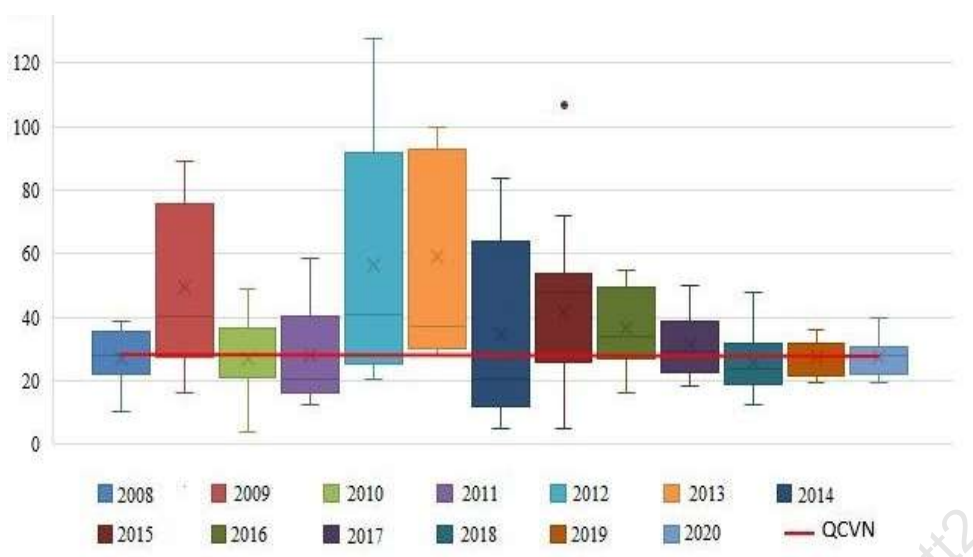


Figure 2. COD in Phu Loc river water (2008 – 2020)

- Based on monitoring results, in the past, Phu Loc river showed signs of pollution of organic matter and micro-organisms. In recent years, this problem has improved because the city has tackled the flow of waste sources into the river such as wastewater from the system of canals and tributaries (B12, B18, B24 canals, Yen The – Bac Son canal, Khe Can canal of Cam Le and Lien Chieu districts).
- On Vu Gia – Thu Bon river basin and Han river in Da Nang, there are 12 monitoring sites of surface water: Nguyen Van Troi bridge (S11); Tuyen Son bridge (S12); Thuan Phuoc bridge (S13); Han River bridge (S14); confluence of Han river and Vinh Dien river (S15); Tu Cau bridge (S16); Cam Le bridge (S17); confluence of Yen river and Tuy Loan river (S18); Red bridge (S19); Qua Giang bridge (S20); Tuy Loan river (S21); Vu Gia river (S22).



Figure 3. COD in Han river water (2008 – 2020)

- According to 2008-2020 monitoring data, on Vu Gia – Thu Bon river basin and Han river in Da Nang, the annual average values of basic parameters such as DO, BOD5 and COD at all monitoring sites were within the acceptable limits of QCVN 08: 2015/BTNMT (B1 column) and showed a downward trend over the years.
- In general, the city's environmental quality is at good level, with significant improvements. However, there are still several unsolved problems such as local pollution in some areas, emergence of new polluted sites, potentially increasing pollution risk due to rapid urbanization.



2. FORECAST

2.1. Air environment

- Variation in air environment quality is proportional to the socio-economic development if there are no effective pollution prevention and control measures. Forecast of changes in city's air quality is done by the Environmental Technology Center (ENTEC) using METI-LIS Ver 2.03⁸. Maps of air quality simulation in Da Nang are developed under 2 scenarios - normal development scenario and controlled development scenario⁹- and for the periods up to 2025 and 2030 (see Appendix III for more details).
- According to the simulation results of air quality changes during the 2025-2030 period, PM10 particles are the main factor with direct impact on the city's air quality. AQI index of PM10 increases and spreads rapidly, mainly due to traffic, industrial production and services. In Hai Chau and Ngu Hanh Son districts (under normal development scenario), the air is in poor quality, while in the other districts, the air is in average quality, and in a part of Hoa Vang district, the air quality is at good level.



⁸METI-LIS was developed by Japan's Ministry of Economy, Trade and Industry in ²⁰⁰⁰, based on the concept of ISC and Gauss models which were developed in ¹⁹⁹⁶. In Japan, this model is used to estimate the distribution of pollutant concentrations from waste sources, helping the Government of Japan to control and guide enterprises in the implementation of pollution control.

⁹In the forecast conditions:

- 1) Based on statistical data of the number of means of transport over the years
- 2) Build a linear regression model, forecast data for future (by 2025 and 2030)
- 3) Normal development scenario: take the upper bound of the 95% confidence interval
- 4) Controlled development scenario: take the lower bound of the 95% confidence interval. This value can be achieved when there are measures to minimize registration of new vehicles, and to restrict registration of vehicles expired.

2.2. Aquatic environment

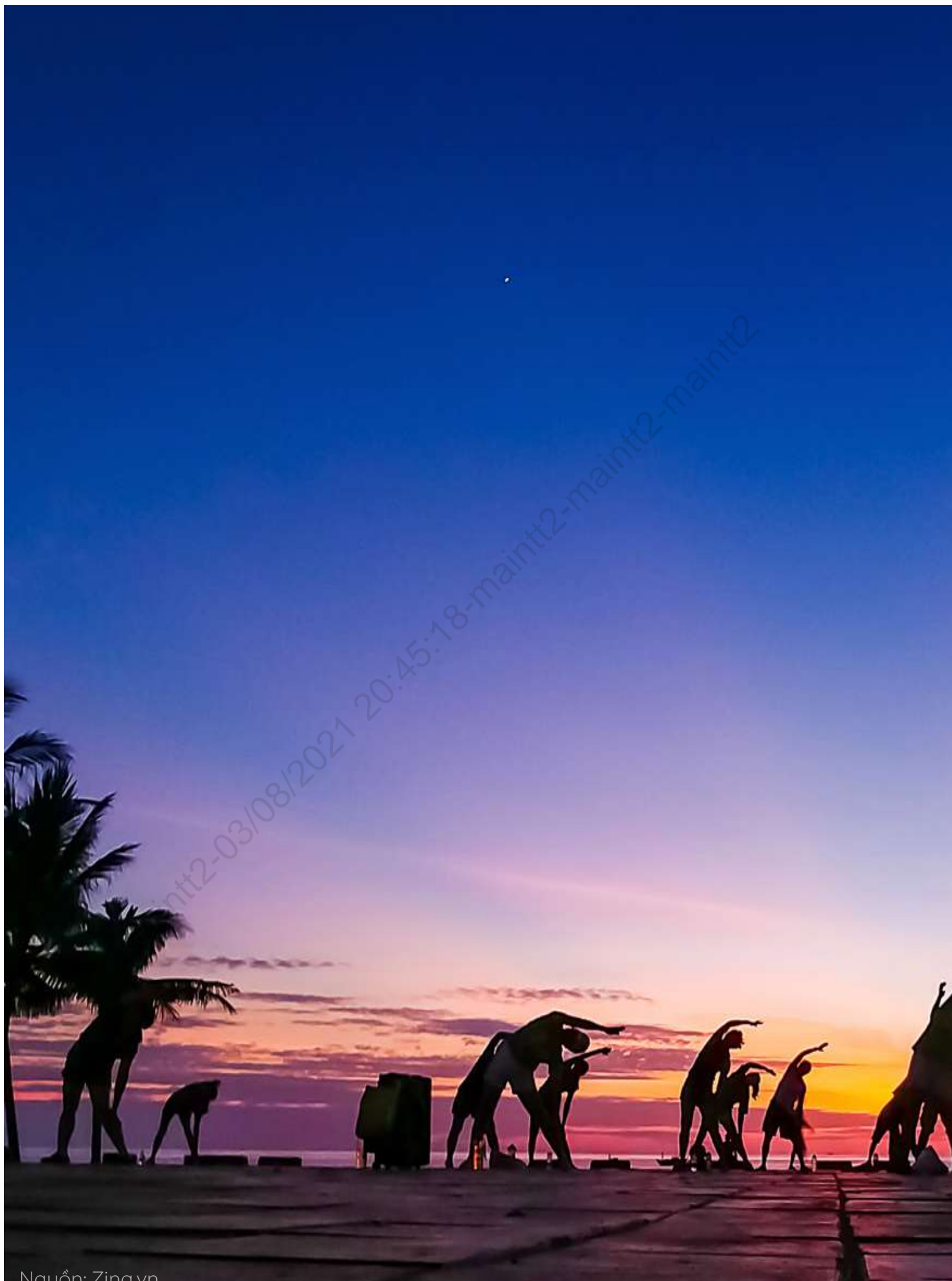
- In order to forecast the changes in surface water quality of the city, ENTEC used the following groups of models: Model 1 (East Sea Model) using the Mike21FM model available at the Southern Institute of Water Resources Research (SIWRR) which is inherited from previous studies; expanded model group (SWAT, MIKE 11) covering Cu De, Han and Vu Gia – Thu Bon river basins to extract marginal changes in river flow; MIKE 21FM detailed model group (HD, Ecolab) to calculate the hydrodynamic regime of the study area under a typical climate, combined with evaluation of hydrodynamic regime, substance dispersion and salinity.
- River water quality in the city is forecast under two scenarios: (1) Lowest-flow frequency of 95% and climate change RCP 8.5¹⁰ in 2030; (2) Lowest-flow frequency of 95% and climate change RCP 8,5 in 2070 (Maps showing corresponding results in the Appendix).
- According to the projections, over the period from 2021 to 2030, with population growth and increasingly rapid pace of development, water pollution problems such as odor, organic and microbiological pollution and salinity in the river basins will be compounded if the city has no preventive measures. The water quality during this period will only improve when the city implements key solutions such as improving the canal system and wastewater collection and treatment system; perform automatic and continuous monitoring of surface water and wastewater, etc. In addition, the city should strictly manage the potential sources of water pollution such as waste from agricultural activities, wastewater from centralized treatment stations, wastewater from factories, production facilities and craft villages in residential areas.



¹⁰RCP8.5: Climate change scenario with representative GHG concentration and annual induced radiation of 8.5 W/m2

- Along with socio-economic development, it is forecast that the total population of the whole city will range from 1.8 to 2.0 million people (including visitors), the total amount of domestic solid waste generated at 2,000 – 2,200 tons/day on average, ordinary industrial waste about 700 tons/day, medical solid waste about 18 tons/day (of which hazardous medical waste 2.5 – 3.0 tons/day) by 2030.
- Thus, there will be large amounts of solid waste generated in the future, especially industrial and medical solid waste containing many toxic components, posing high risk of pollution and diseases, which should be classified and treated properly in accordance with environmental hygiene criteria and regulations. In addition, a large volume of domestic solid waste with a high content of organic matter, which is easy to decompose, causing odors and attracting insects and pathogenic microorganisms, should also be collected and handled effectively in order to ensure environmental sanitation and urban aesthetics.





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CHAPTER III. CONTENT OF THE PROJECT FOR THE 2021 - 2030 PERIOD, WITH A VISION TO 2045

1. VIEWPOINTS AND SCOPE

1.1. Viewpoints

- Environmental protection is the basis for building an ecological city and achieving sustainable development goals. Environmental protection is both an objective and a mission and should be placed at the center of development decisions. Development must be in harmony with nature, respecting the laws of nature; it is not about exchanging the environment for economic growth.
- It is necessary to integrate environmental protection into socio-economic development strategies and plans, promote administrative procedure reforms and apply the advancements of Industry 4.0.
- It is a priority to proactively prevent and control pollution, solve urgent environmental problems, address environmental pollution and degradation, in combination with nature and biodiversity conservation, and active response to climate change.
- Resource mobilization from the society should be strengthened in combination with increasing budget expenditure. Uphold the principle that polluters must pay treatment costs and compensation for damage, and those who benefit from environmental values must pay. Participation of the business community, socio-political organizations and residents in environmental protection should be encouraged.
- It is also necessary to promote internal resources, strengthen international cooperation in environmental protection, and consolidate state management in parallel with raising public awareness about environmental protection.

1.2. Scope

- The Project is implemented in the city until 2030. From now to 2025, the priority is given to addressing key environmental issues and controlling environmental quality. By 2030, it is to establish an ecosystem-based environmental management system on the basis of synchronous implementation of four key component groups: (1) pollution prevention and control, (2) environmental improvement, (3) nature and biodiversity conservation, and (4) capacity building and awareness raising on environmental protection.





2. AIMS AND OBJECTIVES

2.1. Aims

- Continue to maintain and enhance the development goals laid out in the "Building Da Nang into an Environmental City" Project approved by the People's Committee of Da Nang City in Decision No. 41/2008/QĐ-UBND dated August 21st, 2008. Strive to meet all the targets and criteria by 2025, and with a roadmap to 2030 towards an ecological city, thereby offering a good environmental quality to residents, investors, and domestic and international tourists.
- Prevent, minimize environmental pollution and degradation in residential areas, industrial zones, coastal areas, and natural landscape areas. Ensure good quality of the water, soil and air environment according to regulations, with special attention to the issue of air pollution caused by transportation, urban environment management, industry, construction, hazardous waste management.
- Reasonably utilize natural resources, minerals, water sources, forests, to ensure ecological balance and proactively cope with climate change. Build smart processes and systems for better management of natural resources.
- Improve the state management capacity on environmental protection, raise public awareness and create a habit of environmental protection for all people.

2.2. Objectives

a) Prevent and control environmental pollution:

- 100% of enterprises, business and production establishments are eligible for certification of achieving ISO 14000 environmental management system according to regulations.
- By 2025, accomplish the eco-industrial park model; by 2030, there will be from 2 to 3 eco-industrial parks.
- By 2025, 100% of buses (public transport) will meet the Euro 4 Emission Standard; by 2030, 25% of buses in operation in the city will run on electric motors.
- Greenhouse gas (GHG) emission reduction from electric energy solutions, alternative and renewable energy will decrease by 1-2% by 2025 and 5-7% by 2030.
- Over 95% of emission sources (exhaust gas, wastewater and solid waste) are controlled automatically and continuously according to regulations. Air quality index is under 100 and water quality index is above 90.



b) Improve the environment, solve key problems:

- 100% of urban population supplied with clean water through centralized water supply system; 100% of rural population supplied with hygienic water.
- The percentage of urban domestic wastewater properly treated to meet the standards will reach 85% by 2025 and 95% by 2030.
- 100% of industrial parks, industrial clusters and hi-tech parks have concentrated wastewater treatment systems meeting technical environmental regulations.
- The percentage of domestic solid waste collected and treated in accordance with regulations will reach over 95% by 2025 and over 97% by 2030; the percentage of hazardous waste collected and treated in accordance with regulations will reach 100%.
- Environmental pollution hot spots will be rehabilitated. There will be no facilities causing serious environmental pollution.

c) Nature and biodiversity conservation

- Maintain and encourage an increase in forest coverage, maintain the area of protected land and biodiversity.
- Ensure the allocation of public green space per capita in the inner-city at 6m²/person by 2025 and 9m²/person by 2030.
- By 2025, there will be 1-2 concentrated urban areas qualified for ecological urban area model, and by 2030, there will be at least 05 ecological urban areas.
- The proportion of natural resource extraction zones recovered in accordance with regulations out of the total number of zones where extraction is terminated will reach over 50% by 2025 and 100% by 2030.

d) Capacity building, awareness raising on environmental protection:

- Ensure that over 3% of the budget is allocated for environmental protection activities.
- The proportion of households performing waste segregation at source shall reach 90% by 2025 and 100% by 2030; the proportion of schools performing waste segregation at source will reach 100% by 2025.
- 100% of community feedback and recommendations on environmental pollution will be promptly resolved.

Specific targets for each indicator by group and year are shown in Appendix I (attached)



3. MAIN TASKS

3.1. The 2021 - 2025 period

a) Prevent and control environmental pollution

- Improve effectiveness of strategic environmental assessment and environmental impact assessment in urban management: integrate environmental issues into city's plans, strategies, programs and relevant projects; develop and implement of environmental management suitable to each region and field (urban area, rural area, concentrated industry, service – trade, etc.).
- Promote sustainable production and consumption: implement programs and solutions for cleaner production, energy saving, ISO 14000 environmental management system to contribute towards minimizing the exploitation and use of natural resources, raw materials and fuel and reducing emissions in production, business and service establishments, etc.
- Implement the roadmap for relocation of production establishments from craft villages and residential areas to industrial parks and clusters with technical infrastructure for environmental protection meeting prescribed requirements.
- Develop renewable energy and solar energy, replicate models of using renewable energy in large and energy-consuming establishments.
- Develop and implement an investment roadmap to switch the fuel of public transport from gasoline or diesel to clean fuels with fewer emissions, in order to meet with Euro emission standards.
- Control environmental issues, limit bad impacts on the environment, control facilities with high risk of pollution, inspect and handle violations of projects and works causing pollution.
- Develop and implement environmental incident response plans of all levels and sectors; exercise drills on environmental incident response.
- Build technical infrastructure and monitoring network (for surrounding environment, impacted environment, etc.) using modern monitoring technology and environmental database to control and proactively respond.





b) Improve the environment, solve key environmental problems

Aquatic environment:

- Review, invest, renovate and upgrade the domestic wastewater collection and treatment system, and wastewater in industrial zones and clusters.
- Control marine environment, coastal environment; prevent discharge of domestic wastewater into the marine environment; reduce ocean plastic waste.
- Strengthen the control of waste sources, protect surface water (rivers, lakes, lagoons) and Quang Nam - Da Nang interprovincial river basin; thoroughly handle water pollution in Tho Quang fishing wharf; renovate and rehabilitate lakes, ponds and canals.
- Continue to expand clean water supply services, minimize water loss in urban areas, promote investment in building clean water supply systems in rural area that are suitable with standards of the Ministry of Health.

Air environment: Control emission sources, maintain and improve air quality in urban, rural, industrial, tourist, centralized and commercial areas.

Soil environment, solid waste, and hazardous waste

- Review, update, promote investment and upgrade technical infrastructure for solid waste collection, transportation and treatment.
- Promote circular economy models; organize the domestic waste segregation at source, promote recycling, synchronous processing after sorting; minimize landfill disposal of solid waste.
- Implement environmental rehabilitation at solid waste landfills in Khanh Son treatment complex.
- Improve and rehabilitate the environment at mining areas.
- Manage hazardous waste in industrial, agricultural and medical sectors; classify, collect and treat domestic hazardous waste.

c) Preserve nature and biodiversity, promote environmental protection in the exploitation of natural resources

- Implement tasks and programs laid out in the Project on biodiversity conservation in the city for the 2021 – 2030 period; focus on biodiversity conservation in Ba Na – Nui Chua, Son Tra and Nam Hai Van Protected Landscape, and marine biodiversity conservation.
- Review plans to develop the system of green parks, street greenery and tree management.
- Build models of ecological urban areas and develop concentrated ecological urban areas in the city.
- Strengthen management, protection and development of forest ecosystems to reduce emissions and increase the capacity to absorb greenhouse gases; prevent illegal exploitation of plants and animals and illegal deforestation; strengthen capacity in preventing and fighting wildfires to reduce the number of cases and the area of forest burned.

d) Capacity building, awareness raising on environmental protection

- Strengthen the enforcement of policies and laws on environmental protection; develop supporting policies in improving production technologies, waste treatment technologies to minimize environmental pollution.
- Maintain environmental protection activities, movements and models among the community and enterprises, such as: Green-Clean-Beautiful Sunday, World Environment Day, “Make the world cleaner”, etc.
- Mobilize the participation of communities, businesses, organizations and individuals in environmental protection, such as segregating waste, reducing the use of single-use plastic items, etc.
- Develop platform for disclosing information on environmental quality and environmental protection of the city, businesses and communities.





3.2. The 2026 - 2030 period

a) Prevent and control environmental pollution:

Foster the transition towards a circular economy and implement low carbon solutions; encourage environmental management models according to ISO 14000; promote renewable energy; build models of ecological and sustainable industrial parks; encourage the use of environmentally friendly fuels for public bus system.

b) Improve the environment, solve key environmental problems:

Implement solutions to reuse wastewater; encourage investment in practical technologies and apply advanced technologies for waste treatment; encourage investment in environmentally friendly recycling and production projects (plastic alternatives, single-use plastic, sustainable production and consumption)

c) Preserve nature and biodiversity, promote environmental protection in the exploitation and use of natural resources:

Increase public green spaces; implement green transport solutions; replicate models of ecological urban areas; establish wetland landscape protection zones and marine biodiversity conservation zones.

d) Capacity building, awareness raising on environmental protection:

TRaise awareness on environmental protection, the city's aspiration to become an ecological city and circular economy; strengthen human resources for environmental protection; assess the level of satisfaction among organizations, people and enterprises on environment quality and environmental protection in the city.

Detailed programs, projects and tasks in Appendix II (attached)

4. ESTIMATED COST

Funding for the implementation of the Project is determined specifically on the basis of annual plans or approved projects in accordance with national and local legislations. The total estimated cost for implementing the Project for the 2021-2030 period is 15,546 billion Vietnamese dong (VND) (fifteen thousand, five hundred and forty-six billion dong), specifically:

Central budget	: 5,436 billion VND
ODA	: 3,200 billion VND
Social capital	: 6,910 billion VND





5. SOLUTIONS



5.1. Institutions and policies

- Environmental documents and policies issued during the 2008-2020 period remain valid and shall be updated in accordance with the new phase (2021-2030) and other relevant regulations, thereby proposing appropriate mechanisms and policies.
- Plans for water supply, solid waste collection and treatment, and drainage shall be adjusted to suit the current situation.
- Develop policies and regulations to implement the Laws on Water Resources, Land, Minerals, Environmental Protection and other relevant regulations in a resolute and effective manner. Strengthen economic and administrative tools based on the principle of "polluters must pay".
- Build specific system of environmental technical regulations for an environmental city; develop criteria and models for ecological urban areas and ecological industrial parks. At the same time, build an information and open (active) data system unique of a smart and citizen-centric city.
- Strengthen the inspection and supervision of production and business establishments with high risks of environmental pollution; conduct sudden inspection upon signs of violation. Promote coordination between inspection agencies and the environmental police force.
- Implement synchronous solutions to improve efficiency of pollution prevention, environmental improvement, nature conservation, capacity building and awareness raising.



5.2. Science, technology and international cooperation

- Increase investment, cooperation and technology transfer of renewable energy, clean energy and environmental treatment (wastewater and exhaust gas). Coordinate with ministries and agencies to organize international conferences on investment, cooperation and technology transfer with partner organizations from Japan, South Korea, Russia, etc.
- Take advantage of the local strengths in natural energy and waste (sunshine, wind, water, industrial by-products, etc.) and energy development models to serve for socio-economic development while reduce pressure on the environment and state budget for waste disposal.
- Apply new technologies, especially advancements of Industry 4.0 in upgrading the power grid, particularly to improve supply reliability, reduce power loss, increase labor productivity and customer service, etc.
- Encourage the application of ISO 14000 environmental management models, cleaner production, waste audit, product life cycle assessment, and other advanced management models.
- Study pollution treatment technologies and processes that are widely used domestically and internationally to ensure thorough, effective treatment and renovate, rehabilitate polluted areas.
- Access new technologies to facilitate inspection and supervision. Build a database on environmental protection, response to climate change and biodiversity conservation.

5.3. Human resource development

- For areas demanding high levels of qualifications and experience (waste treatment, wastewater treatment, monitoring, etc.), it is necessary to develop a specific plan for staffing, recruitment of qualified personnel with appropriate qualifications and competencies. Trainings are essential to improve in-depth knowledge, especially practical management and problem-solving skills.
- Develop capacity for civil servants and officials in the field of environmental management in Divisions of Natural Resources and Environment at district level towards combining natural resource management and environmental management. In each ward/commune, there should be at least one official responsible for natural resources and environment. For residential groups, a deputy head of a group shall be in charge of environmental issues. The core team of wards/communes is members of associations such as Women's Union, Youth Union, and Youth Pioneer Society, etc.
- Enhance technology transfer, organize annual professional training courses for civil servants and officials in the field of natural resources and environment in order to improve their capacity to manage, monitor and respond to practical issues such as environmental incidents and climate change.
- Strengthen connection with Quang Nam Province, Thua Thien Hue Province and other provinces in the South-Central Coast and the Central Highlands to establish biodiversity conservation corridors and unity in mutual development.



5.4. Financial resources

- Make use of annual budget expenditures for top priority projects; avoid misallocation budget for projects without specific planning or projects that qualify for investment from private or foreign enterprises. Balance the local budget; gradually increase budget funding for environmental protection.
- Increase resources and diversify investment capital sources for environmental protection, including ODA, capital from international cooperation programs, from environmental fee revenues and contributions from domestic and foreign partners.
- Mobilize social capital to promote the joint efforts of the government and all groups of economic and social organizations, businesses and citizens.
- Call for aid sources and foreign investment projects, apply for ODA funding. Relevant departments, agencies and localities shall develop their own specific environmental protection projects to attract ODA investment, with special attention to treatment of wastewater, solid waste, air pollution, noise pollution, and medical waste.
- Promote the Environment Protection Fund to mobilize the resources of the State, the community, domestic and foreign organizations and the financial support of international organizations to solve most pressing environmental problems.
- Develop mechanisms and capital sources to encourage and support enterprises renovating towards resource efficiency, energy saving and environmental protection. Apply credit support mechanisms, subsidy for recycled products; develop the markets for recycled, green, clean and environmentally friendly products.





5.5. Other solutions

- Educate, raise awareness and responsibility in environmental protection; mobilize departments and agencies to develop their specific plans for timely implementation.
- Strengthen education and awareness on tree planting, biodiversity conservation, soil-water-air environmental protection.
- Maximize the effectiveness of the mass media in raising awareness of environmental protection. Develop radio and television programs that focus on responsibilities and benefits of environmental protection. Launch environmental protection movements and activities.
- Strengthen environmental education in schools by integrating environmental knowledge into the curriculum in a scientific and reasonable way, organize extracurricular activities for children to learn about the environment, nature, beach clean-ups, ecosystem conservation, etc.
- Develop and organize communications programs, training courses, forums, events, etc. on environmental protection. Promote knowledge sources and community-based environmental protection models.
- Integrate environmental matters into the city's socio-economic development plans and strategies, with the implementation of strategic environmental impact assessment and essential sustainability-driven adjustments. Establish a long-term and annual financial mechanism for environmental protection with the view that investment in environmental protection is an investment for sustainable development.
- Further encourage private businesses to invest in environmental activities in Da Nang, including waste recycling. Facilitate enterprise collaboration to form Industrial Symbiosis networks.
- Prioritize ODA capital sources to implement the following programs: renovating and restoring the environment for mineral exploitation areas; upgrading, renovating and constructing wastewater and waste treatment facilities.
- Strengthen periodic inspection, monitoring and evaluation of the progress at related units.





CHAPTER IV. PROJECT IMPLEMENTATION FOR THE 2021-2030 PERIOD

1. TASK IMPLEMENTATION AND ASSIGNMENT

1.1. Strengthen the Steering Committee of the Project for the 2021-2030 period

The Steering Committee of the Project for the 2021-2030 period is comprised of:

- Chief of the Steering Committee: a leader of the People's Committee.
- Permanent Deputy Chief of the Steering Committee: Director of Department of Natural Resources and Environment.
- Deputy Chiefs of the Steering Committee: leader of Department of Finance and leader of Department of Planning and Investment.
- Members are leaders of: Office of People's Committee of Da Nang City, relevant departments, People's Committee of districts, and some other mass organizations in the city.

1.2. Task assignment

a) Department of Natural Resources and Environment

- Department of Natural Resources and Environment, assigned as standing agency of the Steering Committee, shall coordinate with other departments, organizations and the People's Committee of districts to execute the Project for the 2021-2030 period; offer advice to the City's People's Committee and the Project's Steering Committee on policies for environmentally sustainable development according to the Project; organize the development of short-term and long-term plans.
- Strengthen supervision of activities of enterprises, production and business establishments related to the environmental field to promptly response. Regularly conduct environmental monitoring to give prompt warnings to people and businesses. Implement the propaganda of environmental guidelines and policies to raise public awareness of the responsibility of environmental protection.
- Lead and coordinate with Department of Planning and Investment, Department of Finance and other relevant departments to ensure the capital source for the implementation of planned tasks and to develop policies that encourage all economic sectors, organizations and individuals to invest in green economic development.
- Assume the prime responsibility for evaluating the estimated costs to implement programs and projects of the plan proposed by agencies and organizations. Coordinate with Department of Finance (for tasks associated with regular spending), Department of Planning and Investment (for tasks associated with spending on investment and development) to offer advice to competent authorities on funding sources in accordance with the Law on State Budget.
- Lead and coordinate with relevant departments, organizations and the People's Committee of districts in environmental monitoring to enhance the effectiveness of environmental protection. Periodically synthesize reports on the Project implementation to report to the People's Committee of Da Nang City.



b) Department of Planning and Investment

- Integrate targets and criteria of the “Building Da Nang into an Environmental City” Project for the 2021-2030 period into five-year and long-term socio-economic development plans of the city.
- According to the assigned functions and duties, coordinate with the Department of Finance and relevant departments to submit to the competent authority to allocate funds for the implementation of the tasks set out in the Project at the request of Department of Natural Resources and Environment and in accordance with the Law on State Budget, the Law on public investment and other relevant legislations.

c) Department of Finance

- At the time of drafting the annual state budget estimate, departments, agencies and organizations shall, based on spending standards and norms in accordance with current regulations, make detailed estimates for their assigned tasks and programs or integrate into other programs and projects and submit to Department of Natural Resources and Environment to review and appraise. The cost estimates are also submitted to Department of Planning and Investment (for tasks and programs associated with spending on investment and development) and Department of Finance (for tasks and programs associated with regular spending) to review and, according to the ability to balance the budget, to report to the People's Committee. The People's Committee will submit the estimate to the People's Council for approval in accordance with the Law on State Budget.

d) Department of Public Security

- Organize the enforcement of the laws and regulations on environmental protection; prevent and combat environmental crimes; ensure environmental security; mobilize forces to participate in responding and resolving environmental incidents.

e) Da Nang Border Defense Force and Da Nang Military Command

- Organize the implementation of environmental protection tasks in the defense sector; participate in responding and resolving environmental incidents; manage marine environment.

f) Department of Science and Technology

- Lead and coordinate with other relevant departments and organizations to offer consultancy and advice on technology selection. Research and develop mechanisms to encourage investment, technology transfer and application of scientific and technological advances.
- Coordinate with departments and agencies to research and apply science and technology, apply economic, technical standards and data systems to improve the environmental quality of the city.

g) Department of Industry and Trade

- Lead and coordinate with Department of Natural Resources and Environment, other relevant departments, agencies and localities to implement programs and projects associated with reducing greenhouse gas emissions, cleaner production, energy saving and renewable energy.
- Support and encourage enterprises, production establishments to replace out-of-date, inefficient equipment with more modern production lines and machines.
- Lead and coordinate with relevant departments and organizations to control investment projects consuming huge energy, natural resources and causing environmental pollution according to Directive No. 30/CT-TTg dated November 27th, 2015.



h) Department of Agriculture and Rural Development

- Lead and coordinate with Department of Science and Technology and other departments, agencies to implement projects in smart agriculture, high-tech agriculture towards green growth and climate change adaptation.
- Lead and coordinate with other departments, agencies and the People's Committees of districts to implement projects associated with prevention of natural disasters, landslides and saltwater intrusion as well as biodiversity conservation.
- Assume the prime responsibility for replicating efficient production models with efficient use of fertilizers, chemicals and water. Promote crop re-structuring to meet each region's conditions and respond to market demand.

i) Department of Transport

- Lead and coordinate with other departments, agencies and the People's Committees of districts to implement projects on reducing greenhouse gas emissions in the transport sector and develop sustainable transport infrastructure and public transport. Ensure the implementation of the set targets and criteria according to the roadmap.
- Actively organize communication campaigns and encourage transportation businesses and establishments to strictly comply with maintenance regulations, and to eliminate outdated and fuel-exhausting vehicles.

j) Department of Construction

- Lead and coordinate with other relevant departments and organizations in programs and projects on sustainable urban planning, technical infrastructure development, green works, and ecological urban areas, in order to ensure the implementation of the set targets and criteria according to the roadmap.

k) Department of Information and Communications

- Lead and coordinate with other relevant departments and organizations in campaigns to educate and raise awareness about the environmental city, legal regulations and policies, guidelines on rational use of natural resources and protection of natural landscapes and environment, and biodiversity conservation.

l) Da Nang Hi-tech Park and Industrial Zones Authority

- Lead and coordinate with other departments, agencies and the People's Committees of districts to inspect the facilities with large amounts of emissions, risks of environmental pollution or red-flagged due to acts causing environmental pollution.
- Lead the development and implementation of guidance to industrial park infrastructure investors regarding registration procedures for certification of "Ecological Industrial Park".
- Promote regulations on environmental protection, encourage industrial park infrastructure investors and enterprises to implement cleaner production measures.



m) Departments, agencies, organizations and the People's Committees of districts

- Based on their functions and duties, departments, agencies, organizations and the People's Committees of districts develop plans to implement their specific tasks of the Project, which should be integrated into their 5-year and annual socio-economic development plans.
- Organize monitoring and evaluation of environmental city targets and criteria; assign tasks and identify individuals with specific responsibility; propose programs, projects and activities related to environmental city.
- Organize extensive education among public servants, employees, and local people about the targets and content of the Project as well as action plans in environmental protection of the city, departments and localities.
- Periodically collect and synthesize information on the implementation of targets and criteria to monitor and evaluate the effectiveness of implementing the Environmental City Project. Produce annual reports on the Project implementation, which clearly identify problems, difficulties and propose solutions for implementation, and submit to Department of Natural Resources and Environment to report to the City People's Committee.

2. MONITORING, PLANNING AND REPORTING

2.1. Monitoring

- Departments, agencies, People's Committees of districts shall take the responsibility for supervising and inspecting the implementation of environmental protection objectives and criteria in order to increase the effectiveness of environmental protection, especially in the fields under their management.
- Monitoring frequency: annually, every five years.

2.2. Planning, cost estimating and reporting

- Departments, agencies, People's Committees of districts shall: develop their plans, cost estimates and reports on the Project's implementation annually; integrate targets and criteria set out in the Project into their programs and plans; identify problems and difficulties in the implementation process and suggest solutions to Department of Natural Resources and Environment.
- Department of Natural Resources and Environment shall take the responsibility for urging, examining, supervising the Project implementation and periodically organizing assessment and review sessions in order to report to the City People's Committee.
- Frequency of planning, cost estimating and reporting: annually, every five years. Every year, plan and cost estimate for the following year should be available by June and synthesis report should be done by December 15th.



APPENDIX I

CRITERIA OF AN ENVIRONMENTAL CITY

(Attached to the Decision No 1099/QD-UBND dated 02/4/2021 of the People's Committee of Da Nang City)

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No	CRITERIA	UNIT	STATUS IN 2020	TARGET		AGENCY IN CHARGE	NOTES
				2025	2030		
I	Group 1: Preventing and controlling environmental pollution						
1	The proportion of enterprises eligible for certification of achieving ISO 14000 environmental management system according to Decree No. 40/2019/ND-CP	%	-	100	100	DONRE	Decree No. 40/2019/ND-CP
2	The number of industrial parks (lps) meeting national standards on eco-industrial parks	IP	0	1	2 - 3	Hi-tech Park and Industrial Zones Authority	
3	The proportion of operating buses in operation in the city running on electric motors	%	-	0	25	Department of Transport	
4	The proportion of new buses meeting the Euro 4 Emission Standard	%	-	100	100	Department of Transport	
5	The rate of GHG emitted from electric energy, new and renewable energy	%/ year	-	Decline by 1-2%	Decline by 7%	Department of Industry and Trade	According to the 2030 Agenda for Sustainable Development up to 2030 (Decision No. 3442/QĐ-UBND dated September 15th 2020)
6	Air quality index (AQI)	-	< 100	< 100	< 100	Sở TN&MT	
7	Water quality index (WQI)	-	-	> 90	> 90	Sở TN&MT	
II	Group 2: Improving the environment, solving key environmental problems						
1	The proportion of population supplied with clean water through centralized water supply system	%	Urban area 98%; Hoa Vang district 80%	100	100	Department of Construction	

No	CRITERIA	UNIT	STATUS IN 2020	TARGET		AGENCY IN CHARGE	NOTES
				2025	2030		
2	The proportion of rural population supplied with hygienic water	%	100	100	100	Department of Agriculture and Rural Development (DARD)	
3	The proportion of urban domestic wastewater treated according to legal regulations	%	83.5	85.0	95.0	Department of Construction	
4	The proportion of industrial parks, industrial clusters and hi-tech parks having concentrated wastewater treatment systems meeting environmental technical regulations	%	100	100	100	DONRE, districts' PCs, Hi-tech Park and Industrial Zones Authority	Plan No. 206/KH-UBND dated January 13th 2020 by the City's People's Committee
5	The proportion of industrial establishments outside concentrated zones (IZs, ICs, hi-tech zones and concentrated production, business and service zones) generating more than 50mpd (24 hours) of wastewater and installing their wastewater treatment systems that meet environmental technical regulations	%	-	100	100	DONRE, districts' PCs, Hi-tech Park and Industrial Zones Authority	Plan No. 206/KH-UBND dated January 13th 2020 by the City's People's Committee
6	The proportion of wastewater reused for other relevant purposes	%	-	10	> 20	DONRE, districts' PCs, Hi-tech Park and Industrial Zones Authority	
7	The proportion of production establishments treating their emissions in accordance with legal regulations	%	-	90	100	DONRE, districts' PCs, Hi-tech Park and Industrial Zones Authority	
8	The proportion of domestic solid waste collected and treated in accordance with regulations	%	95	> 95	> 97	DONRE, districts' PCs, Hi-tech Park and Industrial Zones Authority	According to the 2030 Agenda for Sustainable Development up to 2030 (Decision No. 3442/QĐ-UBND dated September 15 2020)

No	CRITERIA	UNIT	STATUS IN 2020	TARGET		AGENCY IN CHARGE	NOTES
				2025	2030		
9	The proportion of domestic solid waste recycled	%	8-12	15	20	DONRE, districts' PCs, Hi-tech Park and Industrial Zones Authority	
10	The percentage of hazardous waste collected and treated in accordance with regulations	%	100	100	100	DONRE, districts' PCs, Hi-tech Park and Industrial Zones Authority, Department of Health	
11	The proportion of environmental pollution hot spots rehabilitated	%		100	100	Departments, agencies, districts' People's Committees	
12	The proportion of remaining area of polluted land treated and rehabilitated	%	100	100	100	Departments, agencies, districts' People's Committees	According to the 2030 Agenda for Sustainable Development up to 2030 (Decision No. 3442/QĐ-UBND dated September 15 2020)
13	The proportion of industrial zones, production, business and service establishments installing their automatic and continuous monitoring systems of wastewater and exhaust gas (according to the city's environmental protection regulations)	%	56	> 95%	100	DONRE,	Decision No. 33/2018/QĐ-UBND by the City's People's Committee; Decree No. 40/2019/ND-CP by the Central government



No	CRITERIA	UNIT	STATUS IN 2020	TARGET		AGENCY IN CHARGE	NOTES
				2025	2030		
III	Group 3: Nature and biodiversity conservation						
1	The area of public green space per capita in the inner-city area	m2/ per-son		6	9	Department of Construction	According to the 2030 Agenda for Sustainable Development up to 2030 (Decision No. 3442/QĐ-UBND dated September 15 2020)
2	Forest coverage rate	%	47.0	47.0	47.0	DARD	
3	The proportion of mineral extraction zones recovered in accordance with regulations to the total number of zones where mineral extraction is terminated	%	-	50	100	DONRE, relevant departments and agencies, districts' PCs	
4	The number of concentrated urban areas qualified for ecological urban area model (according to city's criteria)	No. of ur-ban ar-eas	-	1-2	> 5	Department of Construction, DONRE, relevant departments and agencies, districts' PCs	
IV	Group 4: Capacity building and awareness raising						
1	The proportion of budget allocated for environmental protection activities	%	3.68	3.70	3.80	Department of Finance	
2	The proportion of production and service establishments invited to training courses on environmental protection every year	%	-	50	100	Departments, agencies, districts' People's Committees	



No	CRITERIA	UNIT	STATUS IN 2020	TARGET		AGENCY IN CHARGE	NOTES
				2025	2030		
3	The proportion of schools implementing waste segregation at source	%		100	100	Department of Education and Training	
4	The proportion of households implementing waste segregation at source	%		90	100	Districts' PCs, Wards/ Communes' PCs	
5	The proportion of wards, communes qualifying for Environmental Wards/Communes (evaluation criteria are to be updated)	%		90	100	Districts' PCs, Wards/ Communes' PCs	
6	The rate of processing environmental pollution feedback and recommendations through the city hotline	%	100	100	100	Department of Information and Communications, DONRE, districts' PCs	
7	The proportion of the public satisfaction about the environment	%	-	80	> 90	Department of Information and Communications, DONRE, districts' PCs	



APPENDIX II

LIST OF PROGRAMS AND PROJECTS

(Attached to the Decision No 1099/QD-UBND dated 02/4/2021 of the People's Committee of Da Nang City)

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No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
I	PREVENTING AND CONTROLLING ENVIRONMENTAL POLLUTION			256	500	2,160	2,916	2,916
1	Non-construction							
1	Investigate and assess current environmental status, develop annual city environmental protection plan, organize strategic environmental assessment in stages (to be integrated into 5-year socio-economic planning report of the city)	State budget	DONRE, Department of Planning and Investment, Department of Finance	3			3	Implemented annually, every 5 years
2	Investigate and evaluate the implementation of the environmental management system, develop and implement the application of ISO 14000	State budget, social capital	DONRE, Hi-tech Park and Industrial Zones Authority, districts' PCs, Department of Tourism, Department of Industry and Trade	3		60	63	Implemented annually
3	Evaluate, plan and implement the Green Growth Strategy for the 2021 – 2030 period	State budget, social capital	DONRE, Hi-tech Park and Industrial Zones Authority, districts' PCs, Department of Tourism, Department of Industry and Trade	5			5	Develop first year's plan Implemented annually



No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
4	Research and develop programs and projects on new energy and renewable energy in the city	State budget	Department of Industry and Trade, other relevant departments and agencies	5			5	Implemented annually
5	Support key energy users to build a management model according to ISO 50001:2018	State budget	Department of Industry and Trade, other relevant departments and agencies	5			5	Implemented annually
6	Control environmental issues, limit bad impacts on the environment, control facilities with high risk of environmental pollution, inspect and handle violations of projects and works causing environmental pollution	State budget	DONRE, Hi-tech Park and Industrial Zones Authority, districts' PCs, Department of Tourism, Department of Industry and Trade, Department of Construction, Department of Transport, Department of Public Security	10			10	Implemented annually



No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
2	Construction							
1	Implement programs and solutions for cleaner production in industry	State budget, social capital	Department of Industry and Trade, other relevant departments and agencies	5		100	105	Implemented annually, every 5 years
2	Support and encourage enterprises to replace out-of-date equipment that has large energy consumption with more energy-saving equipment. Replicate good outcomes.	State budget, social capital	Department of Industry and Trade, other relevant departments and agencies	5		500	505	Implemented annually, every 5 years
3	Invest in public transport powered by electric motors	State budget, social capital	Department of Transport	50		500	550	Implemented annually, every 5 years
4	Invest in the conversion of current bus system into new system meeting Euro Emission Standard	State budget, social capital	Department of Transport	50		500	550	Implemented annually, every 5 years
5	Develop ecological industrial parks (1-3 eco-IPs)	State budget, social capital	Hi-tech Park and Industrial Zones Authority, Da Nang Industrial Zone Infrastructure Development and Exploitation Company (DAIZICO)	10	500	500	1010	Implemented annually, every 5 years

No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
6	Develop and implement environmental incident response plans of all levels and sectors; organize regular rehearsal to respond to environmental incidents	State budget, social capital	DONRE, Hi-tech Park and Industrial Zones Authority, other relevant departments and agencies, and districts' PCs	5			5	Implemented annually, every 5 years
7	Review, update and build technical infrastructure, environmental monitoring network (surrounding environment, impacted environment, etc.) using modern monitoring technology and environmental database to control and proactively respond	State budget, social capital	DONRE, Hi-tech Park and Industrial Zones Authority, and districts' PCs	100			100	2021-2022: continue implementing Decision No. 4111/QĐ-UBND dated September 16th, 2019. After 2022: put into operation, update and submit more projects.
II	IMPROVING THE ENVIRONMENT, SOLVING KEY ENVIRONMENTAL PROBLEMS			4,985	2,500	3,750	11,235	11,235
1	Non-construction							
1	Develop and update the city's annual and 05-year industrial environment management program (for the 2021-2025 period and 2026-2030 period)	State budget	DONRE, other relevant departments and agencies	10			10	Implemented annually, every 5 years

No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
2	Conduct periodic survey and assessment of current environmental status, implement water environment management solutions (ponds, lagoons)	State budget	DONRE, other relevant departments and agencies	10			10	Implemented annually
3	Conduct surveys and audit of waste sources in production, business and service establishments in Da Nang City	State budget	DONRE, districts' PCs, and Hi-tech Park and Industrial Zones Authority	10			10	Implemented annually
4	Make plans and implement a roadmap for relocation of production establishments in craft villages and residential areas to industrial parks and industrial clusters with technical infrastructure for environmental protection meeting prescribed requirements (Tuy Loan rice paper village, Non Nuoc stone carving village, Cam Ne mat village, etc.)	State budget, social capital	Department of Industry and Trade, other relevant departments and agencies	5		50	55	Develop specific projects
5	Develop environmental improvement and rehabilitation programs in mineral mining areas	Social capital	DONRE, Environment Protection Fund, districts' PCs	5			5	Implemented annually
6	Develop a project on the mechanism of management and socialization of environmental treatment (expenses for wastewater and solid waste treatment, etc.)	State budget, ODA	DONRE	10			10	Develop specific projects



No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
7	Update the city's Drainage Plan, develop plans on drainage and wastewater treatment in the expanded and developed areas (Hoa Vang, Lien Chieu, Ngu Hanh Son, etc.)	State budget, ODA	Department of Construction	20			20	Develop specific projects
8	Update the city's solid waste master plan	State budget, ODA	Department of Construction	5			5	Develop specific projects
2	Construction							
1	Build additional wastewater collection pipes: Nguyen Tat Thanh street, along the area of Tuyen Son – Tuy Loan river, 2/9 street, extended Tran Hung Dao street, the section from Tuyen Son bridge to Ngu Hanh Son wastewater treatment plant, etc.	State budget, ODA, social capital	Department of Construction	250			250	Develop specific projects
2	Build rainwater and wastewater drainage systems in the South West area, Cu De river, North West area, West highway and Southeast Hoa Vang	State budget, ODA, social capital	Department of Construction	100			100	Develop specific projects
3	Upgrade Phu Loc wastewater treatment station (Phase 2), Ngu Hanh Son wastewater treatment plant, etc.	ODA	Department of Construction	300			300	Develop specific projects



No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
4	Invest to expand Hoa Xuan wastewater treatment station up to a capacity of 200,000 m ³ /day, new planned wastewater treatment station (Hoa Nhon, Hoa Vang) 80.000 m ³ /day	ODA	Department of Construction	1500			1500	Develop specific projects
5	Renovate and upgrade wastewater collection, drainage and treatment systems in concentrated areas (industrial zones, ICs, high-tech zones, concentrated production, business and service zones)	State budget, ODA, social capital	Hi-tech Park and Industrial Zones Authority, Department of Construction, district's PCs, etc.	500	500		1000	Develop specific projects
6	Improve, invest and upgrade the system of public toilets to meet standards (central area, Nguyen Tat Thanh route, Hoang Sa - Truong Sa - Vo Nguyen Giap route, etc.)	State budget	Department of Construction, Department of Tourism	50			50	Develop specific projects
7	Implement projects to treat and improve the environment of lakes and lagoons	State budget, ODA, social capital	DONRE	30	1000		1030	Develop specific projects according to the Decision on environmental management of lakes and lagoons
8	Control and improve the environment in Tho Quang wharf	State budget, ODA	DONRE, DARD	50	1000		1050	According to Decision No. 2375/QĐ-UBND; For investment items, develop specific projects



No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
9	Expand clean water supply services, minimize water loss in urban areas	Social capital	Department of Construction	5		500	505	Develop specific projects
10	Review and invest in building clean water supply systems according to standards of the Ministry of Health for people in rural areas	State budget, ODA, social capital	DARD, Department of Construction	5			5	Develop specific projects
11	Invest in infrastructure, site clearance at the solid waste management complex in Khanh Son	State budget	Da Nang Management Board of Urban Development and Infrastructure Investment Projects, DONRE	500			500	Develop specific projects
12	Invest in infrastructure, site clearance at the solid waste management complex approved according to the city's master plan	State budget	Da Nang Management Board of Urban Development and Infrastructure Investment Projects, DONRE	500			500	Develop specific projects
13	Complete the socio-economic infrastructure in Hoa Khanh Nam Commune, Lien Chieu District	State budget	Department of Construction, PC of Lien Chieu District, Da Nang Management Board of Urban Development and Infrastructure Investment Projects	500			500	Develop specific projects

No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
14	Complete investment and put into operation waste transfer stations in districts: Hai Chau, Thanh Khe, Son Tra, Ngu Hanh Son, Cam Le	State budget	DONRE, Da Nang Management Board of Urban Development and Infrastructure Investment Projects	600			600	Develop specific projects
15	Invest in projects of solid waste treatment (1800-2500 tons/day and night)	Social capital	DONRE, Da Nang Management Board of Urban Development and Infrastructure Investment Projects, investors			3000	3000	According to the investment projects
16	Invest in projects for hazardous waste treatment, septic tank sludge, construction waste, and waste recycling	Social capital	DONRE, Da Nang Management Board of Urban Development and Infrastructure Investment Projects, investors			200	200	According to the investment projects
17	Invest in motorized means of garbage collection at beaches	State budget	DONRE	20			20	Develop specific projects
III	NATURE AND BIODIVERSITY CONSERVATION			105	200	1,000	1,305	1,305
1	Non-construction							
1	Investigate, assess current status and propose the development of urban greenery and a model of ecological urban area	State budget, ODA, social capital	Department of Construction, DONRE, Department of Science and Technology, districts' PCs	20			20	Implemented annually, every 5 years



No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
2	Investigate, evaluate current status and propose solutions of natural resources protection and forest quality improvement	State budget, ODA, social capital	DARD	5			5	According to Decision No. 3410/QĐ-UBND
3	Strengthen management, protection and development of forest ecosystems; effectively prevent illegal exploitation of plants and animals and illegal deforestation; strengthen capacity in preventing and fighting wildfires to reduce the number of cases and the area of forest burned	State budget, social capital	DARD	20			20	Implemented annually, every 5 years
2	Construction							
1	Develop Green Park Model, Green Urban Model, Eco Urban Model, and replicate	State budget, ODA, social capital	Department of Construction, DONRE, Department of Science and Technology, districts' PCs	10		500	510	Develop specific projects
2	Implement biodiversity conservation in Ba Na – Núi Chua, Sơn Trà and Nam Hải Van Protected Landscape	State budget, ODA, social capital	DARD, Department of Science and Technology, other relevant departments and agencies	40			40	According to Decision No. 3410/QĐ-UBND dated September 14th, 2020 by the City's People's Committee

No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
3	Conduct assessment and propose to establish wetland landscape protection zones (Hoa Trung lake, Dong Xanh – Dong Nghe lake, etc.) and a marine biodiversity conservation zone	State budget, ODA, social capital	DARD, DONRE, Department of Science and Technology, other relevant departments and agencies	10	200	500	710	Implemented after 2025
IV	CAPACITY BUILDING AND AWARENESS RAISING			90	0	0	90	90
1	Develop capital support mechanisms in improving production technologies, waste treatment technologies to minimize environmental pollution and to efficiently use natural resources and energy	State budget, ODA	Department of Finance, Department of Planning and Investment, Environment Protection Fund, other relevant departments and agencies	5			5	Develop project proposals
2	Conduct environmental training and communication activities: World Environment Day, "Make the world cleaner" campaign, Clean Water Week, Green-Clean-Beautiful Sunday, Green Living, etc.	State budget, social capital	DONRE, districts' PCs, other relevant departments, agencies and associations	30			30	Implemented annually
3	Organize the implementation of waste segregation at source, plastic waste reduction	State budget, social capital	DONRE, districts' PCs, other relevant departments, agencies and associations	20			20	Implemented annually



No	NAME OF THE PROGRAM/PROJECT	FUNDING SOURCE	LEAD ORGANIZATION, COOPERATING ORGANIZATION	ESTIMATE CAPITAL (BILLION VND)			TOTAL ESTIMATE CAPITAL (BILLION VND)	NOTES
				STATE BUDGET	ODA	SOCIAL CAPITAL		
4	Propagate and encourage the use of environmentally friendly means of transport	State budget, social capital	Department of Transport, Department of Information and Communications, and relevant associations	5			5	Implemented annually
5	Organize professional training on environmental management, supervision and inspection	State budget, social capital	DONRE, Department of Public Security, other relevant departments and agencies, and district's PCs	5			5	Implemented annually
6	Conduct surveys to assess and update the level of satisfaction among organizations, people and enterprises on environmental quality and environmental protection in the city	State budget, social capital	DONRE, other relevant departments and agencies	5			5	Implemented annually
7	Build an environmental database, maintain the system of disclosing environmental information and organize periodic updates and management	State budget, ODA	DONRE, Department of Information and Communications	20			20	Develop project proposals;
TOTAL				5,436	3,200	6,910	15,546	15,546





APPENDIX III

FORECAST MAPS FOR CITY ENVIRONMENTAL QUALITY

(Attached to the Decision No 1099/QD-UBND dated 02/4/2021 of the People's Committee of Da Nang City)

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I. AQUATIC ENVIRONMENT

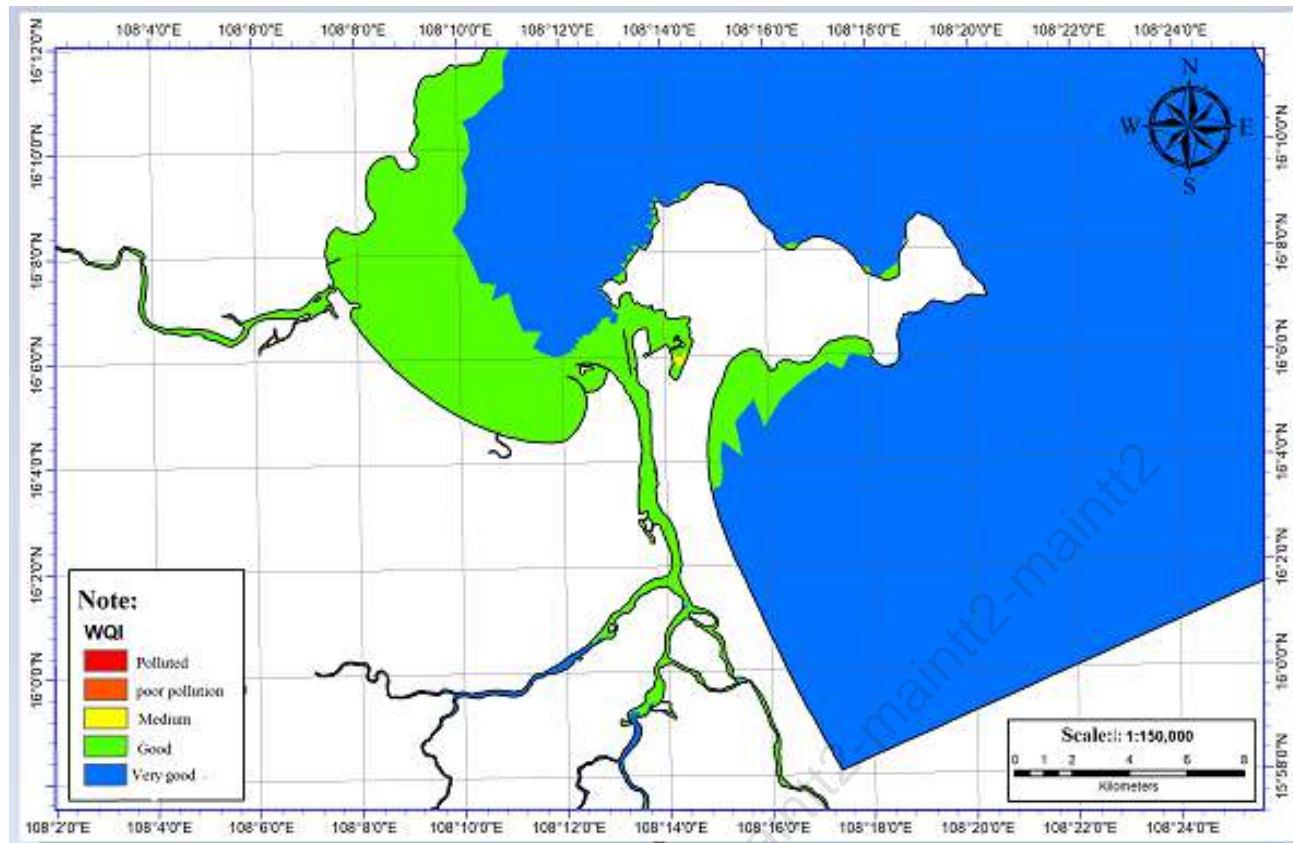


Figure 4. Forecast map of WQI index – Lowest-flow frequency of 95% - climate change RCP 8.5 in 2030

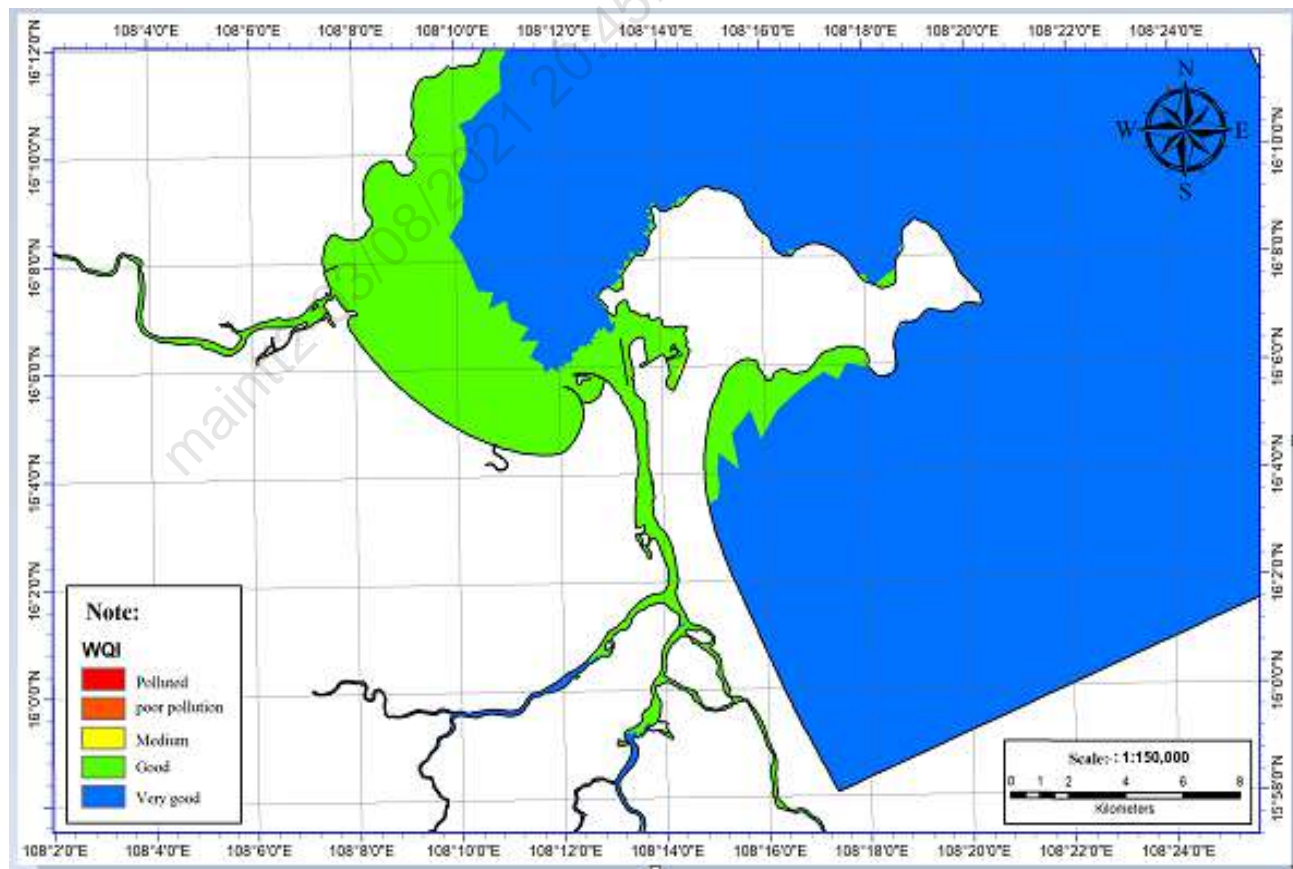


Figure 5. Forecast map of WQI index – Lowest-flow frequency of 95% - climate change RCP 8.5 in 2070

II. MÔI TRƯỜNG KHÔNG KHÍ

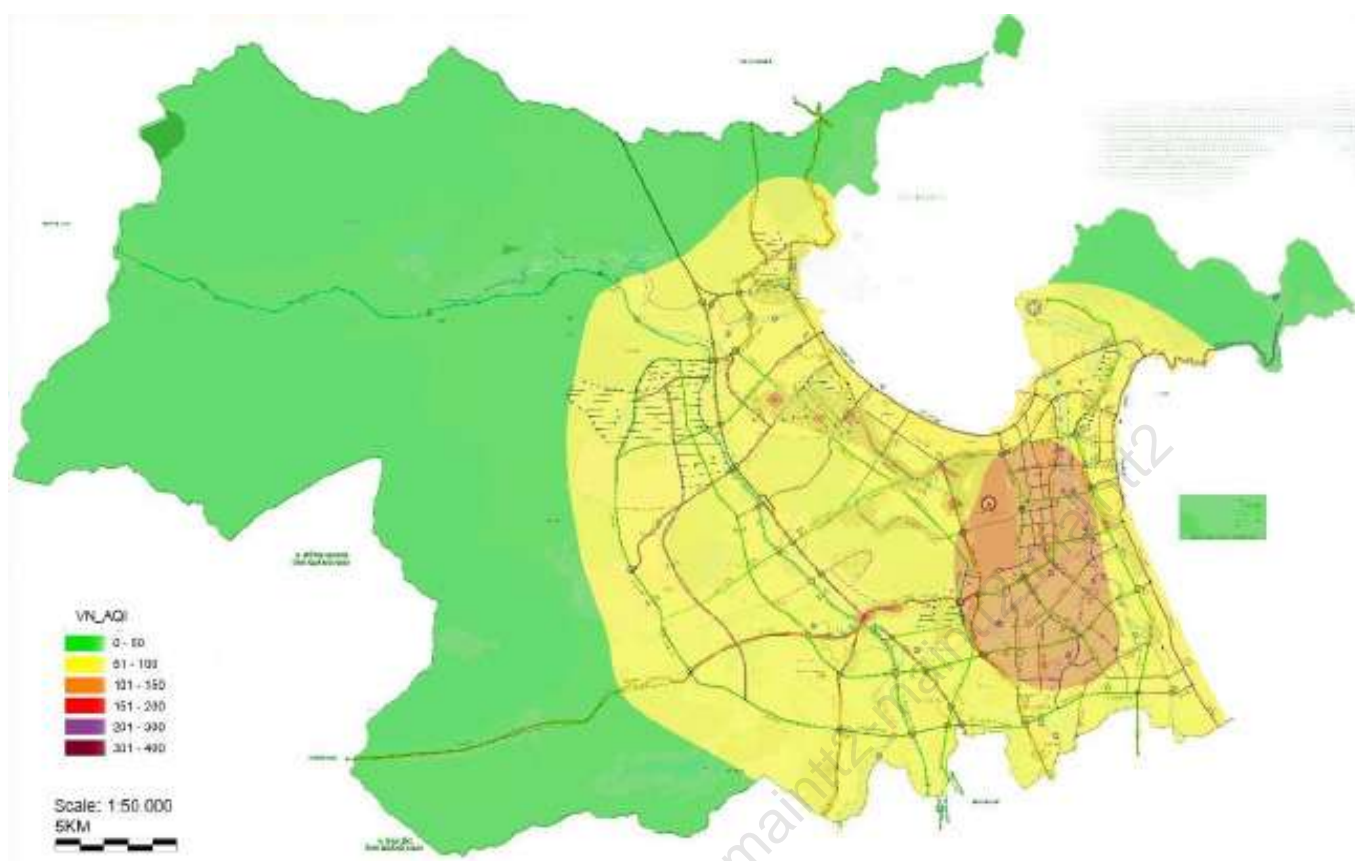


Figure 6. Map of air quality simulation in Da Nang in 2025 under normal development scenario

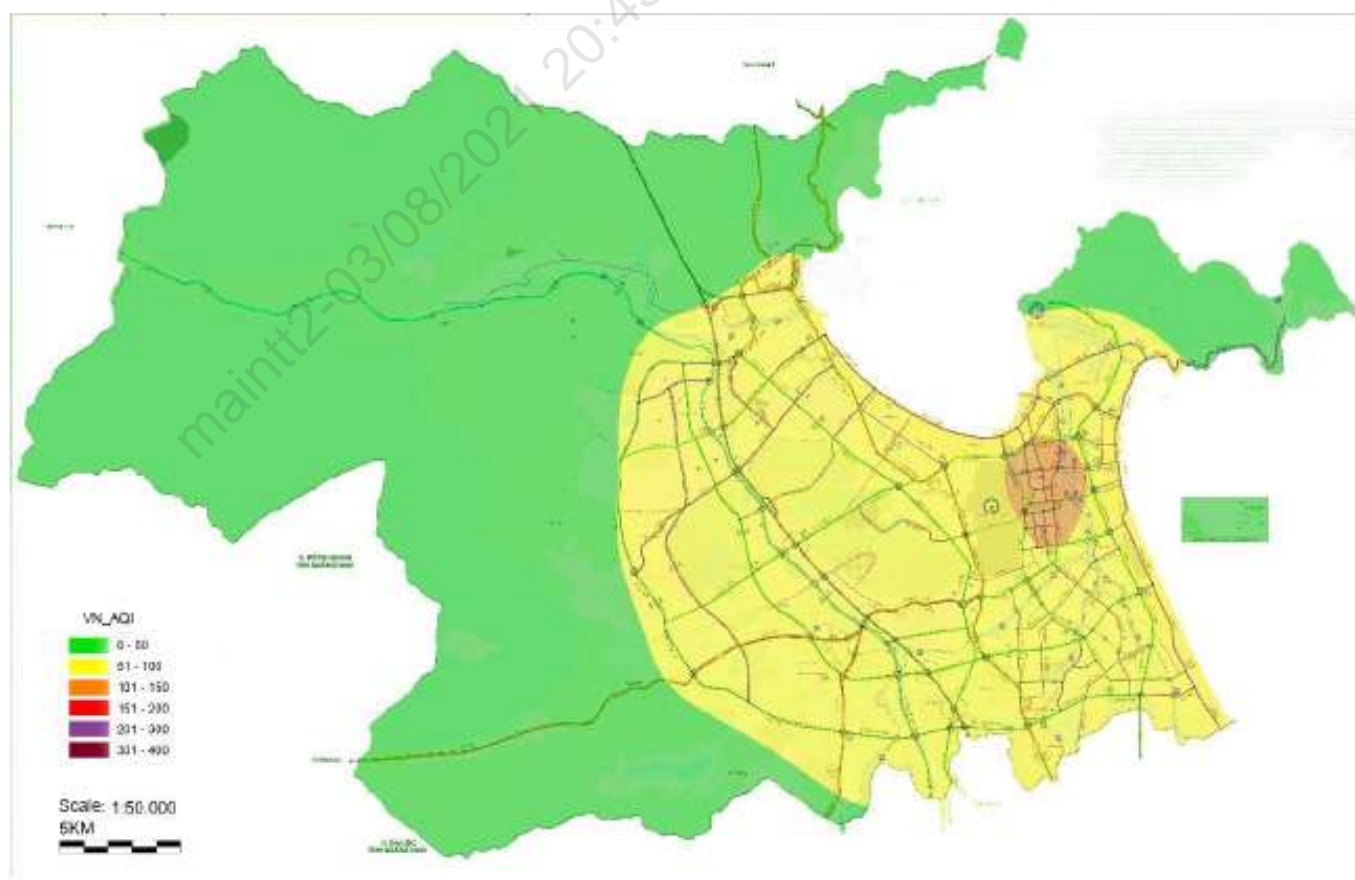


Figure 7. Map of air quality simulation in Da Nang in 2025 under controlled development scenario

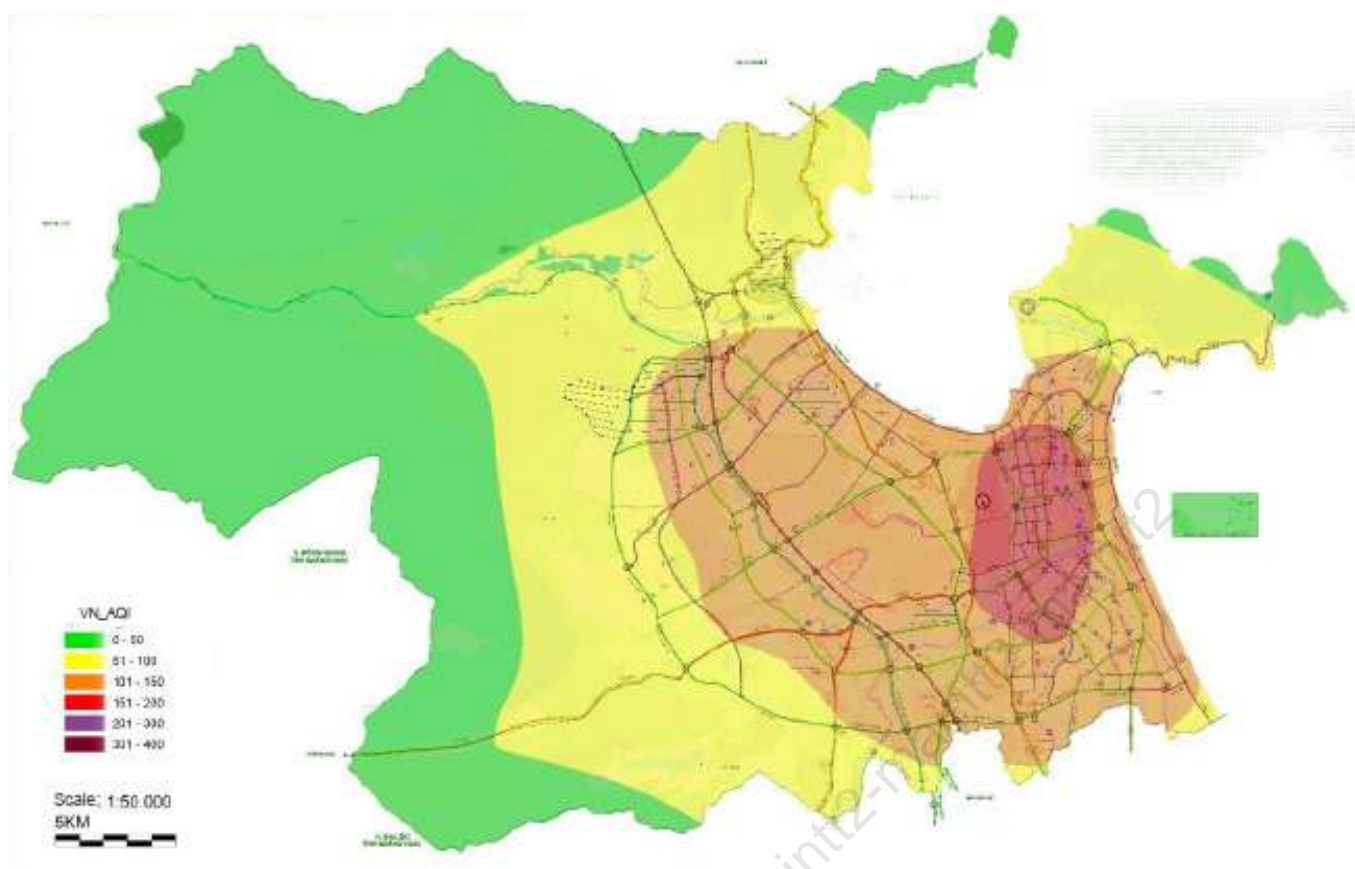


Figure 8. Map of air quality simulation in Da Nang in 2030 under normal development scenario

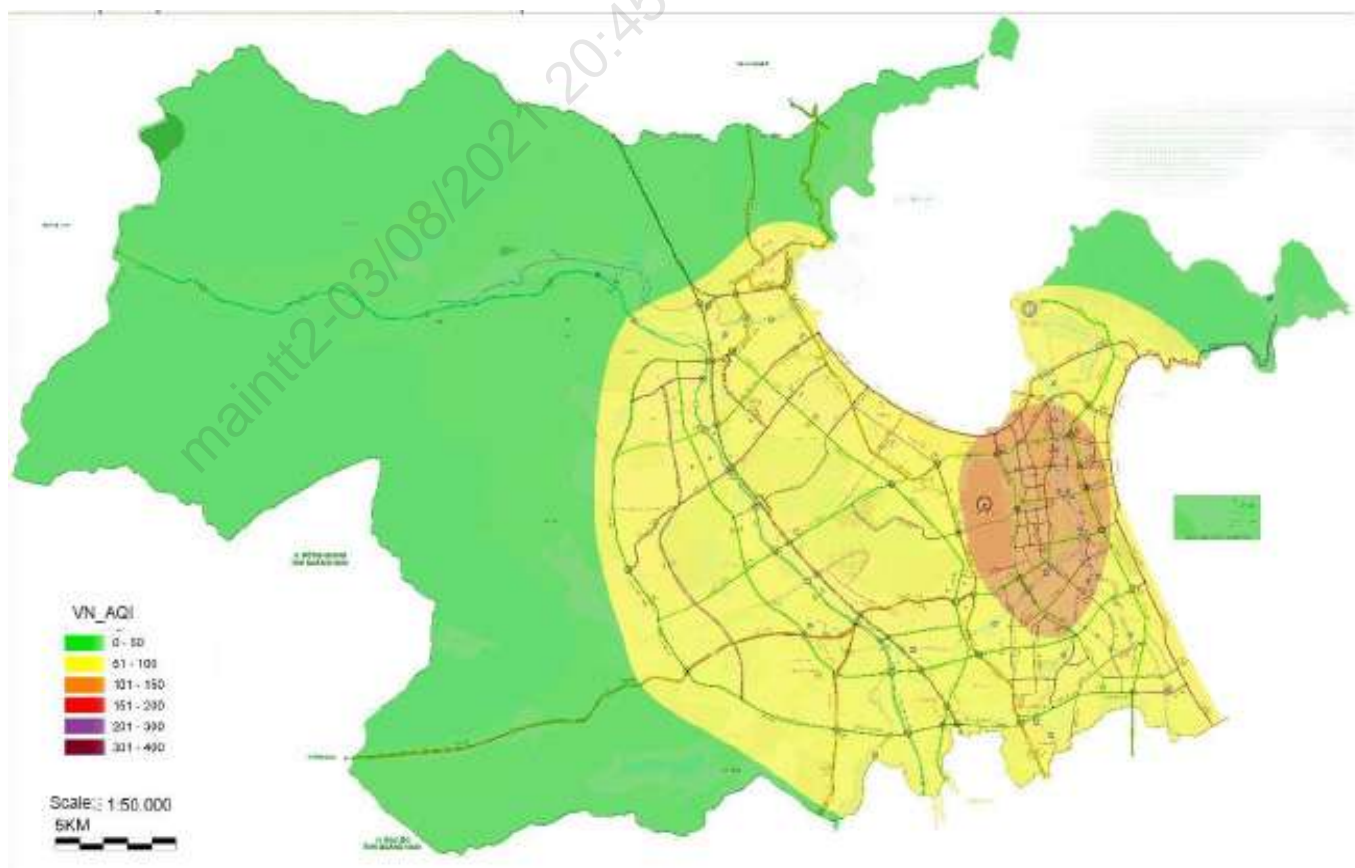


Figure 9. Map of air quality simulation in Da Nang in 2030 under controlled development scenario



CONTACT

DA NANG DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

Add: 15th Floor, Da Nang Administrative Centre,
24 Tran Phu, Hai Chau District, Da Nang City

Tel: +84 236.3.822410

E-mail: stnmt@danang.gov.vn

DA NANG ENVIRONMENTAL PROTECTION DEPARTMENT

Add: 57 Quang Trung, Da Nang city

Tel: +84 236.3.537929

E-mail: ccbvmt@danang.gov.vn

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SOLID WASTE FACTORY (1,000 tons/day)

1.PROJECT OBJECTIVES	a) Scale and capacity of the project: Design capacity: Treat daily-life solid waste 1,000 tons per day/night. b) Technical requirements: Modern and advanced technology, ensuring environmental treatment criteria according to current and future standards of Vietnam.	
2. STATUS OF PROJECT	- Preparing a proposal for a feasibility study report. - Expected international tender opening: Expected in 2022.	
3. FORM OF INVESTMENT	- Investment in the form of PPP. - Proposed project contract type: BLT contract (Build - Lease - Transfer) - The State's participation in the project includes: The State participates in investment in existing infrastructure, leveling, compensation and clearance.	
4.INVESTMENT SCALE	7.1. Estimated investment capital	Proposed by investors
	7.2. Area of land used	The total project area is 29,059 m ² , of which the factory construction area is 12,597 m ² .
5.PROJECT LOCATION	14.1. Location	Solid waste treatment complex, Hoa Khanh Nam Ward, Lien Chieu District.
	- North : Adjacent to the leachate treatment area. - South : Adjacent to the existing waste landfill site. - The East : Bordering the Defense land area and hilly land. - West : Adjacent to the factory of Vietnam Environment Joint Stock Company.	
	14.2. Infrastructure status	Land of landfills
6.PRODUCTS AND SERVICES PROVIDED	Treat domestic waste by burning method; after burning, electricity, fly ash and furnace rust are obtained to produce unburnt bricks; Organic humus is recycled and produced into organic fertilizer; Plastic waste is recycled into plastic granules; RDF fuel pellets.	
7.INCENTIVES POLICY	a) Corporate income tax (CIT) incentives: - 10% CIT rate within 15 years. - Tax exemption in the first 04 years, 50% reduction of tax payable for the next 9 years. b) Preferential import tax: - Goods imported to create fixed assets. - Raw materials, components and supplies that cannot be produced domestically. c) Incentives on land rent: - Exemption from land rent and water surface rent during the period of capital construction according to projects approved by competent authorities, but not exceeding 03 years from the date of issuance of the decision on land lease or water surface rent. - Exemption from land rent and water surface rent after the period of exemption from land rent and water surface rent for the period of capital construction: 11 years for projects on the list of fields of special investment incentives. d) Non-agricultural land use tax: - Exemption from non-agricultural land use tax	